SLOVENSKI STANDARD
SIST EN 60870-2-1:1997

01-avgust-1997

Oprema in sistemi daljinskega vodenja - 2. del: Obratovalni pogoji - 1. oddelek: Napajanje in elektromagnetna združljivost (IEC 870-2-1:1995)

Telecontrol equipment and systems - Part 2: Operating conditions - Section 1: Power supply and electromagnetic compatibility

Fernwirkeinrichtungen und -systeme - Teil 2: Betriebsbedingungen - Hauptabschnitt 1: Stromversorgung und elektromagnetische Verträglichkeit

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Matériels et systèmes de téléconduite - Partie 2: Conditions de fonctionnement - Section 1: Alimentation et compatibilité électromagnétique

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Ta slovenski standard je istoveten z: **EN 60870-2-1:1996**

ICS:

33.200	Daljinsko krmiljenje, daljinske meritve (telemetrija)
	Telecontrol. Telemetering

SIST EN 60870-2-1:1997 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60870-2-1

January 1996

ICS 29.020; 33.200

Supersedes HD 546.2.1 S1:1991

Descriptors: Telecontrol, electric power supply, electromagnetic compatibility, earthing, operating condition, environmental condition, immunity, emission, harmonic content, insulation withstand voltage, data transmission, teleprotection, distribution line carrier system, distribution automation system

English version

Telecontrol equipment and systems
Part 2: Operating conditions
Section 1: Power supply and electromagnetic compatibility
(IEC 870-2-1:1995)

Matériels et systèmes de téléconduite
Partie 2: Conditions de fonctionnement
Section 1: Alimentation et compatibilité électromagnétique
(CEI 870-2-1:1995)

Fernwirkeinrichtungen und -systeme
Teil 2: Betriebsbedingungen
Hauptabschnitt 1: Stromversorgung und elektromagnetische Verträglichkeit
(IEC 870-2-1:1995)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The text of document 57/217/FDIS, future edition 2 of IEC 870-2-1, prepared by IEC TC 57, Power system control and associated communications, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60870-2-1 on 1995-11-28.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1996-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-09-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 870-2-1:1995 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 38 (mod)	1983	IEC standard voltages[1)]	HD 472 S1	1989
IEC 50(161)	1990	International electrotechnical vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60	series	High-voltage test techniques	HD 588.1 S1 EN 60060-2	1991 1994
IEC 664-1	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	-	-
IEC 1000-3-2	1995	Electromagnetic compatibility (EMC) Part 3: Limits - Section 2: Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2 + A12	1995 1996
IEC 1000-3-3	1994	Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to and including 16 A	EN 61000-3-3	1995
IEC 1000-4-1	1992	Part 4: Testing and measurement techniques - Section 1: Overview of immunity tests	EN 61000-4-1	1994
IEC 1000-4-2	1995	Section 2: Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 1000-4-3	1995	Section 3: Radiated, radio-frequency, electromagnetic field immunity test	-	-
IEC 1000-4-4	1995	Section 4: Electrical fast transient/burst immunity test	EN 61000-4-4	1995

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1) The title of HD 472 S1 is: Nominal voltages for low voltage public electricity supply systems.

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Publication	Year	Title	EN/HD	Year
IEC 1000-4-5	1995	Section 5: Surge immunity test	EN 61000-4-5[2)]	1995
IEC 1000-4-6	[3)]	Section 6: Immunity to conducted disturbances, induced by radio-frequency fields	-	-
IEC 1000-4-8	1993	Section 8: Power frequency magnetic field immunity test	EN 61000-4-8	1993
IEC 1000-4-9	1993	Section 9: Pulse magnetic field immunity test	EN 61000-4-9	1993
IEC 1000-4-10	1993	Section 10: Damped oscillatory magnetic field immunity test	EN 61000-4-10	1993
IEC 1000-4-11	1994	Section 11: Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
CISPR 22	1993	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	EN 55022	1994

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2) EN 61000-4-5 includes corrigendum October 1995 to IEC 1000-4-5.

3) At present at the stage of draft international standard.

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NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
870-2-1

Deuxième édition
Second edition
1995-12

Matériels et systèmes de téléconduite –

Partie 2:
Conditions de fonctionnement –
Section 1: Alimentation et compatibilité électromagnétique

Telecontrol equipment and systems –

Part 2:
Operating conditions –
Section 1: Power supply and electromagnetic compatibility

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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PRICE CODE S

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TELECONTROL EQUIPMENT AND SYSTEMS –
Part 2: Operating conditions –
Section 1: Power supply and electromagnetic compatibility

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 870-2-1 has been prepared by IEC technical committee 57: Power system control and associated communications.

This second edition cancels and replaces the first edition published in 1987 and constitutes a technical revision.

iTeh STANDARD PREVIEW

The text of this standard is based on the following documents:

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FDIS	Report on voting
57/217/FDIS	57/249/RVD

SIST EN 60870-2-1:1997
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Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

IEC 870-2-2, *Telecontrol equipment and systems – Part 2: Operating conditions – Section 2: Environmental conditions (climatic, erosive and corrosive, mechanical)*, is under consideration* and will be published soon.

* At present at CDV stage.

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INTRODUCTION

Telecontrol systems are used for monitoring and control of geographically widespread processes and have to work under a wide range of environmental conditions. To ensure optimal performance under all possible conditions, it is absolutely necessary to establish requirements for the apparatus and systems in respect of the different environmental conditions.

This section of IEC 870-2 considers all the electrical environmental aspects, i.e. power supply and electromagnetic compatibility (EMC) requirements. The general indications given in IEC Guides[1)] 106 and 107 have been followed in the preparation of this section, which has to be considered as a *product family standard*, based on IEC basic publications.

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1) – Guide 106: 1989, *Guide for specifying environmental conditions for equipment performance rating*

– Guide 107: 1989, *Electromagnetic compatibility. Guide to the drafting of electromagnetic compatibility publications*

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TELECONTROL EQUIPMENT AND SYSTEMS –

Part 2: Operating conditions –

Section 1: Power supply and electromagnetic compatibility

1 Scope and object

This section of IEC 870-2 applies to telecontrol equipment and systems with coded bit serial data transmission for monitoring and control of geographically widespread processes.

It is also a reference document for teleprotection equipment and systems and for equipment included in a distribution line carrier (DLC) system supporting a distribution automation system (DAS).

This standard specifies, with reference to the various components of the systems defined above:

1) the characteristics of the power supply to which these components are connected during the normal operation;

2) the EMC minimum requirements, expressed in terms of immunity and emission test levels.

With reference to EMC, the test levels have been selected among the classes established by the IEC basic publications on EMC, taking into account the particular environmental conditions under which the various types of equipment considered by this section operate; test procedures, test circuits and acceptance criteria are briefly indicated, making reference for detailed information to the IEC basic publications on the various subjects; reference is also made to basic publications on protection techniques and installation practices.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 870-2. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 870-2 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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IEC 38: 1983, *IEC standard voltages*

IEC 50(161): 1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 60: *High-voltage test techniques*

IEC 664-1: 1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*